DOCUMENT RESUME

ED 375 296 CE 067 453

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TITLE Tech Prep Decision Making: Evaluation and Improvement Strategies.
PUB DATE 29 Oct 94
NOTE 11p.; Paper presented at the Annual Conference of the National Tech Prep Network (Minneapolis, MN, October 29, 1994).
PUB TYPE Speeches/Conference Papers (150) -- Viewpoints (Opinion/Position Papers, Essays, etc.) (120)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Accountability; Cost Effectiveness; *Decision Making; *Educational Change; Educational Improvement; Educational Planning; Educational Quality; *Evaluation Criteria; Evaluation Utilization; Program Development; *Program Effectiveness; *Program Evaluation; Program Implementation; Program Improvement; Secondary Education
IDENTIFIERS *Tech Prep

ABSTRACT

The evaluation process provides valuable information so that practitioners may share and benchmark their efforts to improve and enhance the quality of the educational reform initiative called tech prep. Evaluation should be part of every phase of a tech prep initiative, from needs assessment to completion. A tech prep program is typically at one of three evaluation stages: beginning programs, intermediate programs, and advanced programs. The evaluation design should be simple, understandable, and usable; dynamic; proactive; cost effective; quantifiable; transferable; and formative and summative in nature. Program focus components are areas of an educational program that are to be evaluated. Examples of program components that may be beneficial to consider when evaluating a tech prep effort are as follows: administration and organization; articulation and collaboration; student program planning and implementation; curriculum development; marketing efforts; program effects; staff development; and evaluation strategies. A national evaluation of tech prep education programs funded under the Perkins Act is being conducted to identify effective practices. (YLB)

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ED 375 296

TECH PREP DECISION MAKING: EVALUATION AND IMPROVEMENT STRATEGIES

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Presented at

National Tech Prep Network 1994 Annual Conference
October 29, 1994
Minneapolis, Minnesota

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Tech Prep Decision-Making: Evaluation and Improvement Strategies

Overview

Prior to the widespread implementation of any program of instruction, such as Tech Prep, major questions concerning the program's value need to be answered. Program evaluation is the vehicle by which decision-making information, addressing educational concerns is gathered and analyzed.

The reauthorized Carl Perkins legislation mandates the development of "outcome indicators" (e.g., labor market, learning, and access indicators) designed to measure the performance of Tech Prep efforts within an education system. In addition, five major focus components have been identified as being important to the success of a vocational program in meeting proposed goals: student retention, job placement, competency gains in academics, work or job skill attainment, and vocational skill attainment. These focus components form the basis of the development guide and program component indicators to evaluate each of the components.

Why Evaluate

The approach to evaluation is based on the belief that planning and evaluation are two integrated aspects of the same process and evaluation is intended to assist the decision making process. Tech Prep evaluation is a process that focuses on the outcomes produced as a result of the Tech Prep efforts. It is also a process which provides for accountability.

To conduct an evaluation, it is important to understand its meaning. Evaluation is the process of: (1) determining the decisions to be made; (2) selecting, collecting, and analyzing information needed in making these decisions; and (3) reporting the information to appropriate decision makers. Accountability is being responsible for accomplishing what one states they will accomplish relative to the resources available.

The purpose of evaluation, then, is twofold. Evaluation data is collected to meet the concerns of practitioners and other stakeholders, and to provide useful information for making decision on program enhancements. Stakeholders include: counselors, business and industry, students, administrators, parents, etc. In addition, data is collected to meet the concerns of management audiences and to fulfill the legislative requirements of the states accountability system.

The evaluation process provides valuable information so that we may share and benchmark our efforts to improve and enhance the quality of this important educational reform initiative called **Tech Prep**.

When Should Evaluation Occur?

Planning and evaluation are two integrated aspects of the same process. Evaluation should be a part of every phase of a Tech Prep initiative, from needs assessment to completion. For evaluation to attain its greatest value, we must be clear in terms of what we are doing and why we are doing it. **Evaluation should not be some isolated activity that occurs after the fact**. A Tech Prep program is typically at one of three evaluation stages. These stages include:

Stage One: Beginning Programs (1 - 2 years)

In the beginning of Tech Prep programs, the focus of many program improvement efforts is on understanding the process of articulation and reporting the number of articulated classes/agreements. All postsecondary institutions have maintained a record of the number of articulated courses they offer. The record includes the number of signed articulation agreements and the courses and or program areas that have been articulated. During the first two years of a Tech Prep program evaluation, efforts are often focused on the number of articulation agreements in place, and the number of articulated courses. Other outcome data is often difficult to track during the initial two years of operation.

Stage Two: Intermediate Programs (3 - 5 years)

At the intermediate stage of program development, most administrators broaden the collection of discrete outcome indicators and systematically collect this information in anticipation of comprehensive program evaluations and potential program improvements. The information collected includes the change in the dropout rate and the number of: articulated programs, articulated courses, students enrolled in articulated classes, graduates and those who continue on to postsecondary institutions, and articulation credits earned. This stage begins to provide a basis for determining program "success"

Stage Three: Advanced Programs (5 years +)

At the advanced stage of program development, most administrators have identified a specific number of outcome indicators, established a formal process of data collection, and routinely published the results in an annual report. In some cases, computerized tracking systems have been developed, and eventually identify the students who have declared their Tech Prep major. The data base may include information such as the total number of courses in each high school, the articulated courses, credits available, and equivalent courses.

Other data bases can be developed to measure the percent of enrollment by program of study, and percent of high school graduates attending postsecondary institutions. Ideally the success of Tech Prep programs is determined by conducting longitudinal evaluations and collecting information on multiple outcome indicators. Unfortunately most of the current evaluation efforts rely on limited number of outcome indicators such as enrollment figures and the number of articulated courses. The results of this type of data collection is that the items measure quantity, rather than quality (Dornsife, 1992).

Criteria for Evaluation Designs

Dutton, Hammons, and Ownens (1993) identified seven basic principles/criteria which can be used in developing/or assessing any Tech Prep program. The evaluation design should be:

1. Simple, understandable, and useable,
2. Dynamic,
3. Pro-active,
4. Cost effective,
5. Quantifiable;
6. Transferable, and
7. Formative and summative in nature.

Simple, understandable and usable

- due to the critical need to involve many players in the Tech-Prep process (i.e. leaders of business, industry, and government; parents; students; policy-makers; school personnel-administrators and teachers, both academic and vocational; and, counselors) the evaluation plan must not use technology talk and educational jargon.

- everyone involved in the evaluation process needs to understand what the Tech Prep initiative is trying to accomplish.

Dynamic

- evaluation plan must include the flexibility to grow as the Tech-Prep consortium grows.

- dynamic enough to examine additional areas of evaluation and allow for input and feedback from all stakeholders.

Pro-active

- identify expected outcomes, goals, and standards.

- monitor and report the status of these expectations.

- provide a means with which to identify and implement improvement strategies.

Cost Effective

- data collection process must be efficient in both time and money.

Quantifiable

- numbers are produced denoting the Tech Prep consortium's program development and progress.

- numbers convince audiences including federal, state, and local legislators to continue to invest in the Tech Prep educational reform initiative.

Transferable

- local evaluation plan should complement and augment existing federal and state requirements and keep additional evaluation activities to a minimum.

- program comparisons should be made with the understanding and sensitivity that not all consortia are initially equal and at the same stage of development.

- provide for transferability among statewide consortia so that a consortium may draw upon the expertise of those who are having success in certain areas.

Formative and Summative

- on-going evaluation (formative).
- conducted at the conclusion of a program to determine the worth of the program's accomplishments (summative).

Evaluation Components

Program accountability requires institutions to collect data on outcome indicators. Outcome indicators are objectively measurable statements that determine the quality, effectiveness, and goal attainment of a given program focus component. Outcome indicators include, but not limited to: course enrollments, program completers, job placement, number of articulated courses, number of students enrolled in the classes, increased SAT scores, decreased dropout rates, participation of guidance personnel, and inservice opportunities for staff.

Examples

Tech Prep program completion rate
Vocational guidance program services offered
Tech Prep program recruitment efforts

Program focus components are areas or components of an educational program that are to be evaluated. Dependent upon the nature of the program, they vary from evaluation to another. Focus components include: administration and organization, articulation and collaboration, student program planning, curriculum, marketing, program effects, staff development, and evaluation. It is important to note that most Tech Prep programs have not been in place long enough to provide completion and placement data for graduates, so most outcomes indicators are based on the number of articulated classes and students enrolled in these classes.

Depending upon the stage of the program, the areas to evaluate may vary. The following examples of program components may be beneficial to consider when evaluating your Tech Prep efforts (Ruhland & Custer, 1994; Hammons, 1992). The most important area, for most teachers is curriculum development and program of study as it impacts the progress you and your program are making. Possible questions to ask when evaluating each component are provided.

Administration and Organization

Has a timeline been developed to infuse the Tech Prep program into the existing educational program?

Have committees been formed with representation from business, industry, local educational agencies to meet and advise the consortium coordinator on activities developed?

Who makes up the Tech Prep program staff, and what are their roles?

Articulation and Collaboration

Have written articulation agreements been developed between secondary and postsecondary institution?

What is the method of articulation?

Do articulation agreements reflect a 2 + 2, 4 + 2, or 2 + 2 + 2 program of studies?

If articulation agreements are in place, are plans outlined to review the agreements on a regular basis?

As a result of your Tech Prep efforts, what specifically are your consortium schools doing this year, versus last year?

Student Program Planning and Implementation

Has a four-year plan of study focusing on a career cluster been developed for students?

Do counselors and teachers use program of studies to develop a students' education plans?

What student assessment measures (GPA, test scores, program completion) will be utilized to document student achievement?

What methods are planned for student recruitment and outreach?

Curriculum Development

What are the career clusters, if any, your consortium has developed?

How have applied academics and workplace readiness skills been integrated into the curriculum?

How has the curriculum changed in the occupational or technical programs at the secondary and postsecondary levels to reflect a 2 + 2, 4 + 2, or 2 + 2 + 2 program of studies?

Marketing Efforts

Who is the target audience for your Tech Prep consortia?

What promotional materials were developed to promote/market Tech Prep, and how effective were they?

Do the promotional/marketing materials reflect the 2 + 2 concepts, articulation, sequence of courses within the vocational areas?

What marketing efforts have worked to inform teachers, counselors, students, parents, and businesses about Tech Prep?

Program Effects

What student assessment measures will be utilized to document student achievement as a result of the newly implemented curricula?

How has the curriculum changed in the occupational or technical programs at the secondary and postsecondary levels to reflect a 2 + 2, 4 + 2, or 2 + 2 + 2 program of studies?

How many students completed "dual-credit" courses to transfer to community/technical colleges?

What is being done to identify test scores for students in a Tech Prep program?

Staff Development

Is there a plan which outlines and provides staff development activities for all Tech Prep facilitators, including administrators, counselors, academic and vocational faculty?

What have been your successful accomplishments to date in implementing staff development activities as they relate to Tech Prep?

What steps have been taken to involve faculty in making school changes aimed at Tech Prep?

Evaluation Strategies

What methods are planned for local evaluation of your Tech Prep efforts?

What types of information would be essential for continued success with your Tech Prep efforts?

What barriers, if any, have you encountered in implementing the Tech Prep concept?

Examples

Program Component: Program Effects
Indicator: Tech Prep program completion rate
Outcome: All Tech Prep students will complete a high school program component

Program Component: Student Program Planning and Implementation
Indicator: Vocational guidance program services offered
Outcome: All Tech Prep students have a four-year plan of study focusing on a career cluster

Program Component: Marketing Efforts
Indicator: Tech Prep program recruitment activities
Outcome: All stakeholders understand the benefits of Tech Prep

There are several other questions that need to be asked, based upon the stage of the Tech Prep program. These questions may include:

1. Who wants to know the information?

2. What are they interested in? What, if anything, needs to be different?

3. Whom are we evaluating (target population)?

4. What specific outcomes or changes, if any, are we seeking?

5. Who should do or assist with the evaluation?

National Evaluation of the Tech Prep Education Program

A national evaluation of Tech Prep education programs is being conducted by the Mathematica Policy Research, Inc., Northwest Regional Educational Laboratory in Princeton, NJ. This contract was awarded in October 1992, by the U.S. Department of Education, Office of Policy and Planning to conduct the national evaluation.

Description of the Evaluation

The Evaluation of the Tech Prep Education Program has two primary objectives. First, it will fully describe the Tech Prep programs funded under the Perkins Act - documenting the number of programs, their characteristics, the institutions involved, the populations they serve, and their planning and implementation activities. Second, the evaluation will identify effective practices. It will document in detail the approaches taken by "exemplary" Tech Prep programs and developing programs which show promise to provide guidance to other program consortia in their efforts to improve vocational education.

The evaluation will also measure the progress of Tech Prep students in high school and in the postsecondary stage of the program, and compare their progress with that of similar students not involved in Tech Prep; this comparison will provide a context in which to analyze the achievement and outcomes of Tech Prep students.

The five-year evaluation will have three major data collection components:

- A survey of state-level Tech Prep coordinators to document the state's role in funding and guiding the development of Tech Prep Programs conducted twice, in the fall 1993 and 1996.
- A survey of local Tech Prep programs, conducted annually for four years beginning in the fall of 1993, to document their characteristics and development.
- In-depth case studies of selected local programs, conducted four times beginning in the 1993-94 school year, to identify and document in detail how successful programs have been planned, designed, and implemented.

The in-depth study will be based on intensive on-site examination of ten local programs. These programs are from the states of: Oregon, Illinois, Massachusetts, Arizona, Florida, Connecticut, California, West Virginia, Ohio, and Alabama. The study will include site visits and interviews with program administrators and other staff: a longitudinal survey of a sample of two cohorts of Tech Prep students selected in 11th grade and followed throughout the duration of the study; and the collection of school records data on the academic experiences of these students at the secondary and postsecondary levels. Outcomes for the sample of Tech Prep students credits earned, grades and test scores, high school completion, postsecondary matriculation and progress, and employment and earnings-will be compared with corresponding measures for a national sample of students drawn from the National Educational Longitudinal Surveys (NELS).

Summary

It is important to remember that the evaluation component is a part of the Tech Prep operational plan. It is also important to recognize that most educational administrators have a tendency to undervalue evaluation and to deprive themselves and their programs of its benefits.

Clearly there is a variety of models to better understand what constitutes an effective program. There is widespread agreement on the ideal evaluation components for Tech Prep, and this variation provides for designing effective programs that suit the needs of different schools and different student populations.

Thus our evaluation efforts will need to continue to address a variety of issues. These issues relate more to the **outcomes indicators** that need to be reported to specifically address the Tech Prep efforts and include:

How many secondary Tech Prep students enrolled in a Tech Prep course of study at a postsecondary institution?

How many secondary Tech Prep students received advanced placement or dual credit?

How many secondary Tech Prep students completed a vocational sequential course of study?

How many postsecondary Tech Prep completers are employed in their focused career choice?

How many postsecondary Tech Prep completers are employed in a related field?

How many postsecondary Tech Prep completers continued their education at a four year institution?

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